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(71) Demandeur/Applicant:
MYINT, TOM, CA

(72) Inventeur/Inventor:
MYINT, TOM, CA

(54) Titre : DISPOSITIF D'AERATION DE SECURITE
(54) Title: SECURITY AIR VENT

(57) Abrégé/Abstract:

The normal functions of an Air Vent are :- a) To allow the free movements of air in and out of an enclosed structure through the vent. Examples : Fig. A - Common existing air vent with fixed louvers. Fig. B - Existing air vent with motorised shutters. b) To prevent the penetration of rain water into the structure. Examples : Fig. A - All fixed louvers sloped downwards at the outer side. Fig. B - Motorized shutters open fully when in use with an exhaust fan. The Shutters will shut close when not in use. The fundamental difference of this Security Air Vent is that it will not allow any (toxic) liquids or solids to get through the vent even these liquids or solids are under pressure. Yet it functions as a normal air vent allowing free air movements in and out through the vent at all times. Whereas, existing conventional air vents would allow the penetration of other (toxic) liquids or solids of getting through the vent openings, especially when these liquids or solids are being applied through the vent openings with just minimum pressure. This design is based on the concept of the ability of dissipation of incoming energy imposed upon it by the external force or pressure, either in the state of solid or liquid. The energy absorbent design arrangement of the S-shape structural members in the outer stage will dissipate most or all of the incoming energy. A similar secondary stage protection arrangement inside will further ensure the dissipation of the remaining energy, if there remains of any residue. Further protection could be added by installing a reservoir type partition inside for some special locations that call for extreme security measures. Structural member could be made of steel, stainless steel, aluminium, fibreglass or plastic. It is most useful for safeguarding the security of the public potable water system, especially for the enclosed potable water reservoir and other vital installations against sabotages, vandalism and other accidental contamination by animals or birds. The design of the arrangement of the structural members are as shown on the Design Sketch.



SECURITY AIR VENT

FOR ENCLOSED POTABLE WATER RESERVOIR AND OTHER VITAL INSTALLATIONS.

PURPOSE :

To safeguard the security of the **public potable water system** and other vital installation against sabotages, vandalism and other accidental contamination by animals or birds.

FUNCTION :

As an Air Vent it allows the **free movements of air in and out**. But, it **will not allow any liquids or solids to get through the vent** even it is under pressure. Even such drastic actions as jetting water into the slot openings of the vent with a high-pressure fire hose at all possible angles, or by sand blasting in the similar manner.

DESIGN CONCEPT :

This is based on the ability of dissipation of incoming energy imposed upon it by the external force or pressure, either in state of solid or liquid.

The energy absorbent arrangement of the structural members in the outer stage will dissipate most or all of the incoming energy.

A similar second stage protection arrangement inside will further ensure the dissipation of the remaining energy, if there remains of any residue.

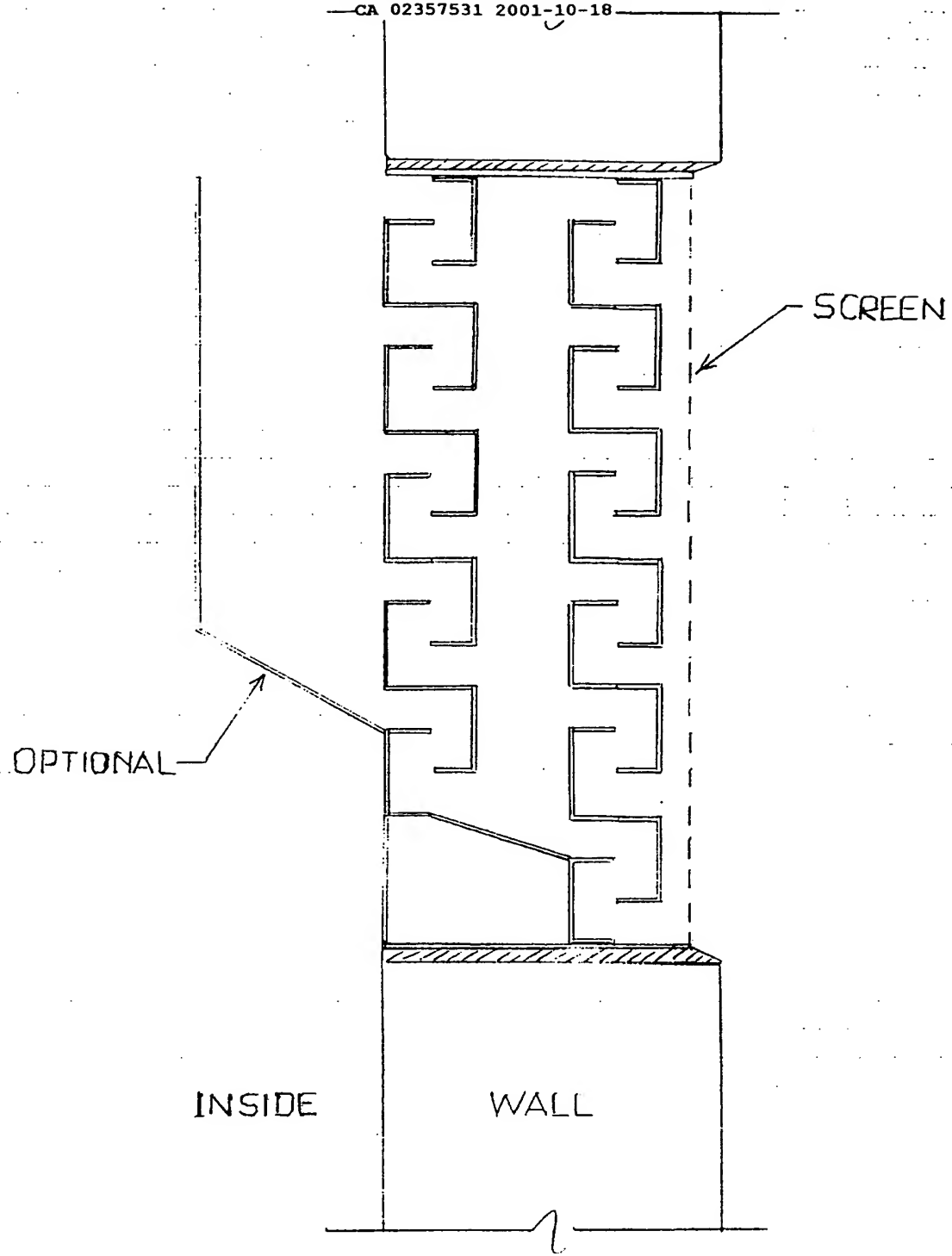
Further protection could be added by installing a reservoir type partition inside for some special locations that call for extreme security measures.

DESIGN :

The design of the arrangement of the structural members are as shown on the Drawing. Structural members could be Aluminium, Fibreglass, Steel, Stainless Steel or Plastic.

USERS :

- Provincial and City Water Filtration Plants built with Clearwell or Reservoir.
- City and Township water system Reservoirs.

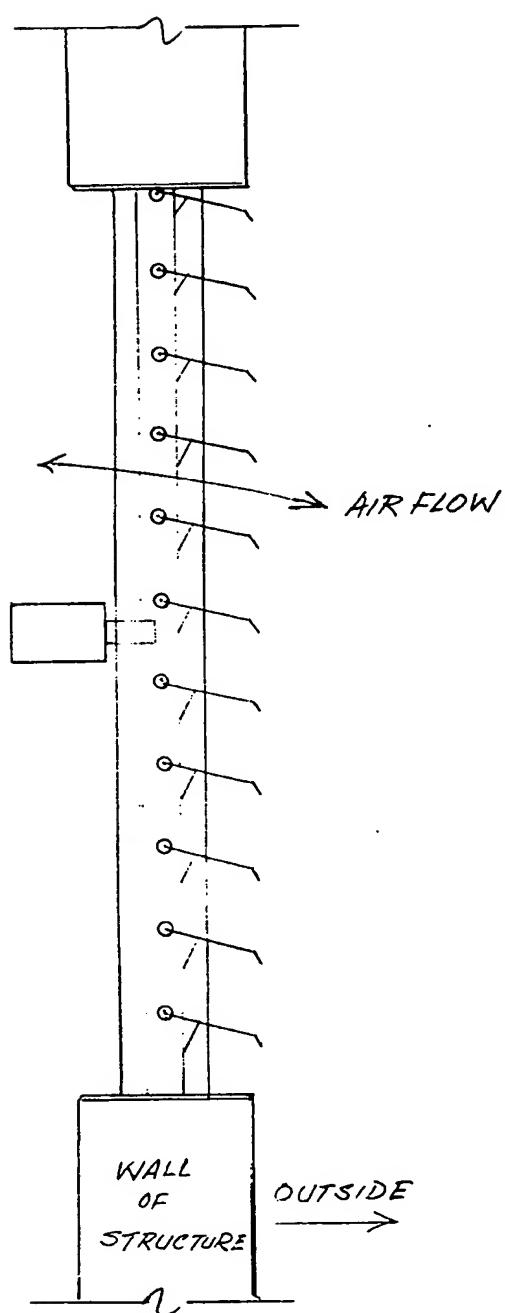


SECURITY AIR VENT

FIG. SAV-01

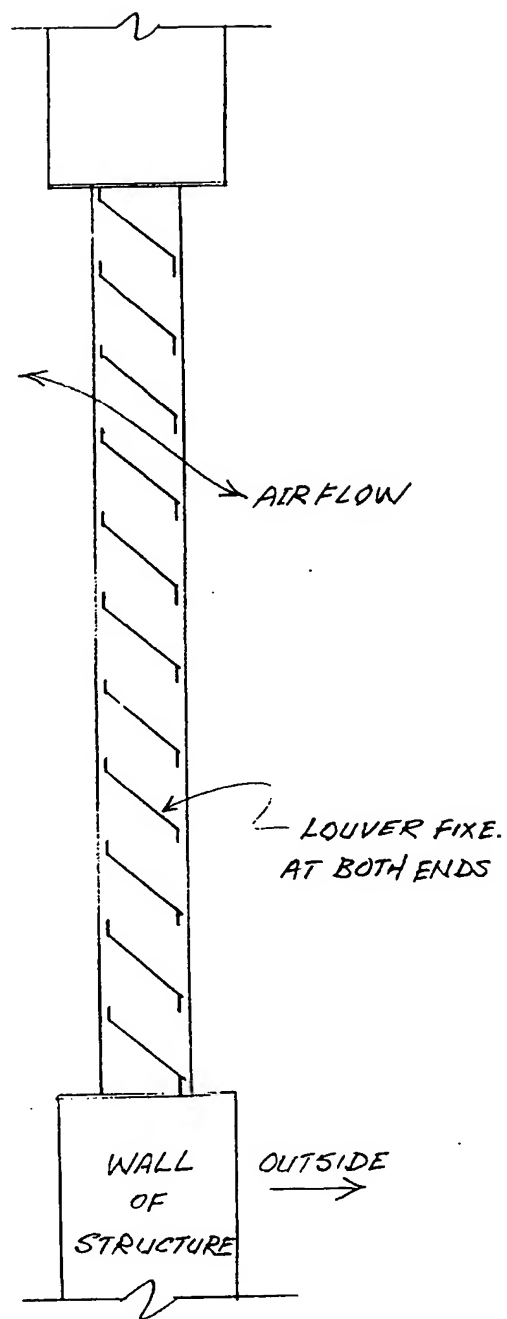
DESIGN BY: TOM MYINT, PENG.

CONVENTIONAL AIR VENTS



AIR VENT
WITH MORTORIZED SHUTTERS

FIG. B



AIR VENT
WITH FIXED LOUVERS

FIG. A

CLAIMS

1. The Security Air Vent consists of two stages of specially designed S-shape energy absorbent and dissipation structural members.
2. These S-shape members are purposely arranged in such formation so that the ultimate objective of security is obtained without compromising its basic function as an Air Vent.
3. The special formation of the S-shape members will allow free flow of air in and out of the Vent.
4. The special formation of the S-shape members will not allow the penetration of any (toxic) liquids or solids through the vent, even these liquids or solids are being forced under pressure.
5. The specially designed energy absorbent arrangement of the S-shape members in the outer stage will dissipate most or all of the incoming applied energies of the liquids or solids.
6. A similar secondary inner stage will further ensure the dissipation of the remaining energy, if there remains of any residue.
7. Further security protection could be added, if necessary, by installing a reservoir type partition inside for some special locations that call for extreme security measures.
8. The formation of the S-shape members will lead all the incoming energy-dissipated liquids or solids flowing down back outside the Vent.
9. There is another advantage from its outside physical appearance. It looks more like a metal siding wall of the building rather than an actual air vent. Therefore, it will arouse less attention.
10. The outer screen will prevent the intrusion of birds or animals.

SECURITY AIR VENT

Application No. 2357531

By : Tom Myint, P.Eng.

ABSTRACT

The normal functions of an Air Vent are : -

- a) To allow the free movements of air in and out of an enclosed structure through the vent.
 Examples : Fig. A - Common existing air vent with fixed louvers.
 Fig. B - Existing air vent with motorised shutters.
- b) To prevent the penetration of rain water into the structure.
 Examples : Fig. A - All fixed louvers sloped downwards at the outer side.
 Fig. B - Motorized shutters open fully when in use with an exhaust fan. The
 Shutters will shut close when not in use.

The fundamental difference of this Security Air Vent is that it will not allow any (toxic) liquids or solids to get through the vent even these liquids or solids are under pressure.

Yet it functions as a normal air vent allowing free air movements in and out through the vent at all times.

Whereas, existing conventional air vents would allow the penetration of other (toxic) liquids or solids of getting through the vent openings, especially when these liquids or solids are being applied through the vent openings with just minimum pressure.

This design is based on the concept of the ability of dissipation of incoming energy imposed upon it by the external force or pressure, either in the state of solid or liquid.

The energy absorbent design arrangement of the S-shape structural members in the outer stage will dissipate most or all of the incoming energy.

A similar secondary stage protection arrangement inside will further ensure the dissipation of the remaining energy, if there remains of any residue.

Further protection could be added by installing a reservoir type partition inside for some special locations that call for extreme security measures.

Structural member could be made of steel, stainless steel, aluminium, fibreglass or plastic.

It is most useful for safeguarding the security of the public potable water system, especially for the enclosed potable water reservoir and other vital installations against sabotages, vandalism and other accidental contamination by animals or birds.

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